

# PATENT SPECIFICATION

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(19)



## (54) HAND GRIP FOR A HAND KNIFE

(71) We, PLAS PLUGS LIMITED, a British Company, of Paget Street, Burton-on-Trent, Staffordshire, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:-

This invention relates to a hand grip for a hand knife housing a blade of steel strip which can be projected from the hand grip for use and retracted into this grip and out of the way when not in use.

This type for adjusting the position of the blade relatively to the hand grip to vary the amount of projection of the tip of the blade from the leading end of the grip but this has involved the dismantling and opening up of the hand grip in something of a laborious operation to allow the blade to be re-set.

It is a first object of the present invention to furnish an arrangement in which the amount of projection of the blade can be adjusted by the hand of the user in a simple operation without any dismantling of the hand grip. A second object is to provide in very simple fashion for adjustment of the length of projecting blade to a range of tip sizes.

Forms of blade strip are known typified by parallel lines of weakening which can be broken along these lines by a tool to enable a worn, operative end of a blade to be discarded in favour of a fresh end. This invention further sets out to present a hand grip construction which incorporates a detachable tool for this purpose.

Thus the present invention provides, for a hand knife having renewable blade portions, a hand grip for a hand knife comprising an elongated body defining therein a longitudinal passageway for a blade in strip form, and having a longitudinal slot in communication with at least a portion of the length of said

passageway which receives and permits the movement along the grip of a blade shifting element, a set of fixed detent formations in said body cooperating with a complementary formation on said knife-shifting element to engage and locate the shifting element in a selected adjusted position, said body being further provided with a removable end portion, said end portion having a slot, into which a worn, end, portion of the blade may be received, a twisting action thereon being then required to snap off the worn end portion.

The required disengagement and re-engagement of the interlocking formations on the hand grip body and the shifting element is, in a preferred embodiment of the invention, implemented by making this element of a flexible plastics material which will cater for the required interlocking in adjusted status but will yield under finger pressure to deform and release the interlocking engagement. In this arrangement the formations referred to may be interengaging parallel serrations or teeth on the shifting element and the body.

In further elaboration of the invention we describe below two embodiments of a hand knife constructed according to the invention. This description, which is to be read with reference to the drawings accompanying the provisional specification, is given by way of example only and not by way of limitation.

In the drawings:-

Figure 1 is a perspective illustration of the first embodiment of a knife according to the invention;

Figure 2 is an exploded view showing in perspective the component parts of this first embodiment;

Figure 3 is a cross section through the assembled knife of Figure 1;

Figure 4 is a view similar to Figure 1 but showing a second embodiment; and

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Figure 5 is an exploded view showing the components of the knife of Figure 4.

Referring first to Figures 1 to 3 the hand grip of the knife there illustrated is generally designated 1. The body of this grip is made up of two major portions, a base portion 2 forming the larger part of the blade housing, and a complementary cover portion 3 which fits into a dished recess 4 in the base portion 2. The cover portion 3 is provided along the major part of its length with a slot 5 which is open at the right hand end as viewed in the Figures. The cover 3 is also provided along each side edge with depending lugs 6 which are out-turned at their lower ends to form teeth 7. The base portion 2 is provided at intervals along the sides of recess 4 with openings 8 to receive the lugs 6 when the cover portion 3 is pushed into recess 4. The teeth then engage with the base (see Figure 3) to provide a firm attachment between the cover and base portions.

Figure 3 shows the assembly body 1 and the manner in which the lugs 6 and their teeth 7 are received in the openings 8 and grip corresponding undercuts in the cover 3. Figure 3 also shows the slot 5 in the cover portion 3 and a passageway 9 between the cover portion 3 and base portion 4 for receiving a strip-form knife blade 10.

It will also be observed that the portion 3 is provided alongside the major part of the length of the slot 5 with flanking serrations 11 which extend along the body 1. These serrations are provided for cooperation with a blade-shifting element 12 which is shown at the right hand side of Figure 2. This element consists of a serrated head 13 with two side wings 14, also serrated, a nose 15 with a stud 16 at its leading end and tail 17. When the article is assembled the element 12 is received between the cover 3 and the base 2 with the head 13 projecting through the slot 5 and the wings 14 engaging the serrations 11. At the same time the stud 16 is engaged in a hole 18 at the rear end of the knife blade 10.

The various elements so far described, with the exception of blade 10 which is of steel, are moulded from a plastics material, for example polypropylene, which, at any rate in the case of the element 12, is flexible and deformable under normal finger pressure. Thus, with the parts assembled in the condition shown in Figure 1, the serrations 14 on element 12 are in locking engagement with the serrations 11 to hold the element 12 in position within the body 1 with sufficient firmness to resist any shifting when pressure is applied thereto by a cutting action performed with the operative tip of blade 10. On the other hand, the material of element 12 will yield by the application of finger pressure to the head 13 and allow detachment of wings 14 from the serrations

11 to enable the blade to be moved by applying a forwardly or rearwardly directed pressure to element 12. It will therefore be observed that the tip of blade 10 can be projected to a greater or lesser degree from the leading end of body 1 by simple finger action on element 12, and automatically relocked in adjusted position.

Referring in particular to Figure 1, it will be noted that the right hand end of slot 5 as viewed in that Figure is closable, when the knife is assembled ready for use, by a detachable end component 19. This end component 19 is provided at one end with slots 20 for engagement with rebated flanges 21 at the rear end of base 2, and is thus a simple push-in fit on this base.

At its opposite end the component 19 is provided with a transverse slot 22 which enables it to function as a blade-breaking tool. It will be observed that the blade illustrated in Figures 1 and 2 is provided with parallel lines of scoring 23 transverse to its length. These represent zones of weakness which can be broken to remove a worn tip of the blade and expose a fresh tip as and when required. The component 19 can be used as a breaking tool for this purpose. The blade 10 is projected an appropriate distance from the body 1, the component 19 removed from body 1 and held between the thumb and forefinger, the leading end of the blade inserted in the slot 22 and the component 19 is then twisted to break off the leading end of the blade.

A modified embodiment of the invention is illustrated in Figures 4 and 5. The components of this form of knife have been identified with the same references as have been used in connection with Figures 1 to 3, where these parts are identical or similar. However it will be noted that a somewhat modified form of end component 19 is here used. This is provided with a stub 24 having projections 25 which engage resiliently with corresponding recesses 26 in the body of base portion 2'. It will also be observed that this base is of modified formation in relation to the base portion 2 of Figures 1 to 3 and that the cover portion 3' in this construction is engaged over ribs 27 moulded on the base portion 2' and having recesses 26.

In this construction use is made of notches 11 in the cover portion 3' and a shifting element 12' is used which is modified slightly in relation to the corresponding element 12 of Figures 1 to 3, as are side wings 14' thereof and the nose 15' compared with wings 14 and nose 15.

#### WHAT WE CLAIM IS:-

1. A hand grip for a hand knife comprising and elongated body defining therein a longitudinal passageway for a blade in strip form, and having a longitudinal slot in communication with at least a portion of the

length of said passageway which receives and permits the movement along the grip of a blade shifting element, a set of fixed detent formations in said body cooperating with a complementary formation on said knife-shifting element to engage and locate the shifting element in a selected adjusted position, said body being further provided with a removable end portion, said end portion having a slot, into which a worn, end, portion of the blade may be received, a twisting action thereon being then required to snap off the worn end portion.

2. A hand grip as claimed in claim 1, wherein the body comprises two interengaged portions, one forming a base portion and the other a cover portion for the passageway, the slot being formed in the cover portion and being flanked by serrations comprising said detent formations.

3. A hand grip as claimed in claim 2, wherein the blade-shifting element is of flexible plastics material and comprises a

head portion adapted to receive finger pressure to flex the element, two wing portions bearing serrations, which engage with the detent formations on the cover portion when the element is unflexed.

4. A hand grip as claimed in any one of the preceding claims wherein the blade-shifting element is provided with a projection or stud engageable with an aperture in the blade.

5. A hand grip for a hand knife adapted to house a blade of strip steel, constructed, arranged and adapted to operate substantially as herein described with reference to and as shown in

(i) Figures 1 to 3 or

(ii) Figures 4 and 5

of the drawings accompanying the provisional specification.

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